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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GORDON, BRIAN R

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant N

09/783,232

Applicant(s)

KISHKOVICH ET AL.

Examiner

Brian R. Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Pri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Respons to Arguments

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 10, it unclear what the transfer of flow is in between. The claim recites "transfer flow of a gas between a primary channel,....". A primary channel and what? Page 5, lines 27-28 teaches "....programmed to alternately transfer the flow of gas sample between the primary channel and one of the scrubbing channels."

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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1. Claims 1-5 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinozaki et al. US 6,470,760.

Shinozaki et al. disclose a system of four parallel scrubbers (see figure 8) for sampling air in a clean room (for semiconductor fabrication – semiconductor processing tool) wherein contaminants such as ammonia (ammonia ions which inherent implies that an ion exchange material is employed) and other trace substances are removed from the air and analyzed while the clean air is returned to the environment through the exhaust system of the device.

In general the device comprises (a) a sampler for making a sample containing a desired substance at a sampling point, the sampler including a diffusion **scrubber**, (b) a concentrator for concentrating the substance contained in the sample to thereby produce a concentrated sample, the concentrator including a concentration column, (c) a quantitative analyzer for analyzing quantitatively the substance contained in the concentrated sample, (d) a cleaner for cleaning the sampler by using a **purging gas**, and (e) a **controller** for controlling the sampler, the concentrator, the analyzer (detector), and the cleaner to cause automatically operations of the sampler, the concentrator, the analyzer, and the cleaner repeatedly at specific intervals of time.

As disclosed the device also comprise a purge system: "The cleaner 500 comprises the purging gas tank 119, a MFC 120, and the valve 105, which cleans the inside of the sampling tube T, the diffusion scrubber 109, and the air path 109a. The tank 119 stores the purging gas. As the purging gas, any inert gas such as pure nitrogen gas may be used. The MFC 120 controls the flow rate of the purging gas."

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green et al. US 5,199,263 in view of Nickens et al. US 6,267,931 and Shinozaki et al. US 6,470,760.

Green et al. discloses a wet scrubber system for flue gas desulfurization for the principle of cleaning of waste gases before discharge into the atmosphere. Figures 4A–4D are isometric views of the flue gas routing in which the combustion gases are flowed through three separate scrubber towers in parallel configuration. A vent 444 is provided at the top of every tower 440. (This vent can be used for an air purge when a tower is shut down.) Each scrubber tower bypassed via plenums.

FIGS. 4A through 4D are isometric views of the flue gas routing used in the presently preferred embodiment. In the presently preferred embodiment, the combustion gases are flowed through three separate scrubber towers in parallel.

As shown in FIG. 4A, the hot gasses generated in the boiler leave the boiler through outlet 404. At the boiler outlet 404, the exhaust gasses are at about 340.degree. F., and are at a pressure very close to atmospheric. This gas flow is predominantly composed of nitrogen, carbon dioxide, water, and oxygen; but it also contains (when high-sulfur coal is being burned) 0.1% or more of SO₂, and lesser amounts of other noxious species such as SO₃, nitrogen oxides, and HCl.

In the presently preferred embodiment, about 2.5 million cubic feet per minute of exhaust gas flow out of the boiler 100. Of this amount, about 500,000-550,000 cubic feet per minute are flowed through each of the three scrubber towers, and the rest is routed directly to the stack.

Green et al. does not state specifically that the device comprises a control system; however it is obvious that the device comprises some means of control for it is recited the pump and other elements are under the control of an operator.

Nickens et al. discloses a waste treatment system in which scrubbing units are employed for the purpose of neutralizing or treating hazardous gases. The device further comprises a remote room provided with a control panel for controlling the connecting inputs and outputs.

At any point in the flow path of the waste product, the waste may be routed through manifold 2 to receiving system 70. Preferably, the waste would be directed to one of the holding vessels 40 (optimally with the assistance of pump 8) to enable a system operator to analyze a sample of the waste via sample port 9.

As best seen in FIG. 3, according to this feature, a remote room 19 is preferably located within the trailer 18. Remote room 19 is preferably exterior to, and may be adjacent to, airtight enclosure 5. Room 19 is preferably provided with a control panel 191 which may be capable of selectively and remotely connecting inputs and outputs 50,60 of distribution manifold 2. These connections may be achieved by any appropriate method, such as providing flexible connectors 51 with quick-disconnect-type fittings and providing hydraulic, electronically-actuated controls to receive electronic signals from control panel 191. These signals would preferably cause the hydraulic controls to connect and disconnect the fittings of connectors 51 as desired. Alternately, connectors 51 could all be pre-connected through a system of electronically-actuated valves

controlled by remote panel 191. In this embodiment, the valves could be opened or closed in the appropriate sequence to achieve the desired flow path.

The remote room 19 is preferably provided with remote viewing devices, such as closed-circuit monitors or T.V.s 193 linked to remote cameras 194 which are preferably positioned within enclosure 5. This feature allows remote viewing of the interior of enclosure 5 to provide added safety to the operation of system 1. Further, remote room 19 preferably houses a sampling panel 195, which is operatively linked to a remote valve actuation mechanism 196 positioned within enclosure 5. Mechanism 196 preferably permits a waste cylinder to be remotely sampled and identified. Mechanism 196 may also be used to provide remote actuation of cylinder valves when the contents of the waste cylinders are believed to be unstable or explosive or otherwise dangerous.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the device of Greene et al. by incorporating the remote room of Nickens in order to allow for the remote control of the system as well as allow for remote viewing of the system via T.V. monitors.

Green et al. US 5,199,263 in view of Nickens et al. US 6,267,931 do not specifically recite that the devices are employed in the semiconductor fabrication industry.

Shinozaki et al. disclose a system of four parallel scrubbers (see figure 8) for sampling air in a clean room (for semiconductor fabrication semiconductor processing tool) wherein contaminants such as ammonia and other trace substances are removed

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from the air and analyzed while the clean air is returned to the environment through the exhaust system of the device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize that the modified device by be employed to use in combination with a clean room of a semiconductor fabrication facility in order to monitor and control the concentration of contaminants therein.


As to the method claims 3-4, and 12-19, it would have been obvious to one of the ordinary skill in the art at the time of the invention to recognize that the modified device of Greene has the capabilities of performing the claimed method steps.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is (703) 305-0399. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Jill Warden
Supervisory Patent Examiner
Technology Center 1700

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BRG

June 26, 2003